Oxford Cambridge and RSA

Level 3 Alternative Academic Qualification Cambridge Advanced National in Health and Social Care

H125 Unit F091: Anatomy and physiology for health and social care

Sample Assessment Material (SAM)

Time allowed: 1 hour 30 minutes

XXX/XXXX

No extra materials are needed.

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number | | | | | | Candidate number | | | | |

First name(s) _____

Last name _____

Date of birth | D | D | M | M | Y | Y | Y | Y |

INSTRUCTIONS

- Use black ink.
- Write your answer to each question in the space provided. You can use extra paper if you need to, but you must clearly show your candidate number, the centre number and the question numbers.
- In the live exam there might be lined pages at the end of the question paper for you to use if you need extra space. Remember, you must clearly show the question numbers.
- Answer **all** the questions.

INFORMATION

- The total mark for this paper is **60**.
- The marks for each question are shown in brackets **[ ]**.
- This document consists of **16** pages.

ADVICE

- Read each question carefully before you start your answer.

SAMPLE

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Section A

1 State **one** function of white blood cells.

.....**[1]**

2 What type of test is used to monitor the cardiac cycle?

.....**[1]**

3 Where in the respiratory system does gaseous exchange happen?
Tick (✓) **one** box.

Alveoli ☐

Bronchi ☐

Bronchioles ☐

Pleural fluid ☐

[1]

SAMPLE

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4 Which part of a neurone releases neurotransmitters during nerve action?
Tick (✓) **one** box.

Axon ☐

Myelin Sheath ☐

Node of Ranvier ☐

Synaptic knob ☐

[1]

5 What are carbohydrates broken down into during chemical digestion?
Tick (✓) **one** box.

Amino acids ☐

Fatty acids ☐

Glucose ☐

Glycerol ☐

[1]

SAMPLE

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6 State **one** main sign or symptom of gallstones.

.....**[1]**

7 Which hormone is released by the pancreas to lower blood glucose levels?

.....**[1]**

8 State **one** factor that makes it more likely someone will have an ischaemic stroke.

.....**[1]**

9 Where in the female reproductive system does a foetus gestate?

.....**[1]**

10 Carpal tunnel syndrome can be diagnosed using physical examination or an ultrasound scan.

State **one** other way to diagnose carpal tunnel syndrome.

..... **[1]**

SAMPLE

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SAMPLE

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Section B

11

(a) Complete the sentences below to describe what happens in inspiration when breathing.

In inspiration, the external intercostal muscles …… This pulls the …… upwards. At the same time the …… contracts and moves downwards.

This increases the volume in the chest cavity, which decreases the pressure. Air then …… the lungs to equalise the pressure.

[4]

SAMPLE

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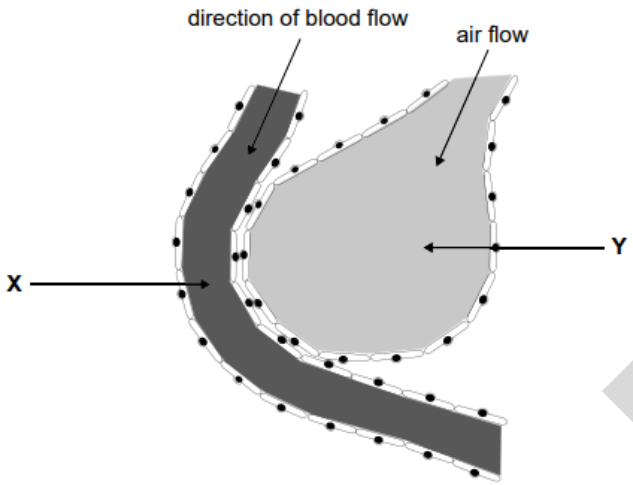
(b) The diagram shows a capillary and an alveolus.



Explain how gases are exchanged between X and Y as the blood flows in the capillary.

.....

.....

.....

.....

.....

[3]

(c) Complete the sentence below about cellular respiration.

..... + ... → carbon dioxide + water + energy released as ATP molecules

[2]

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(d) Nina has brought her 6-month-old baby to hospital with a cough, breathing difficulties and a fever.

(i) Which respiratory condition is most likely to be affecting Nina's baby?

Respiratory condition .....**[1]**

(ii) Explain why you think this condition is most likely.

.....

.....

.....

.....

[2]

SAMPLE

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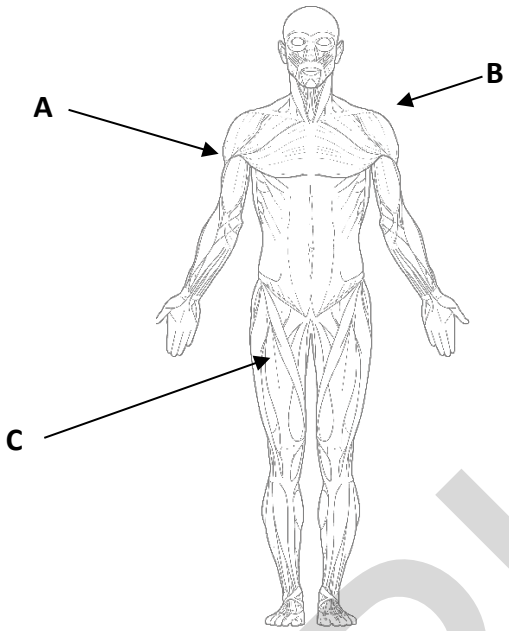
12

(a) Identify the muscles in the diagram below



Letter	Muscle
A	
B	
C	

[3]

(b) Describe synovial fluid and its role in the movement of a synovial joint.

.....

.....

.....

.....

.....

[3]

SAMPLE

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(c) Analyse how osteoarthritis affects the musculoskeletal system.

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[6]

SAMPLE

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(d) Eve is 93 years old. She has recently been diagnosed with osteoarthritis in her hip joint. The doctor has recommended she is treated with pain medication and uses joint support devices.

Explain why the doctor would recommend pain medication and joint support devices for Eve at this stage, rather than a hip replacement operation.

.....

.....

.....

.....

.....

[3]

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13

(a) Outline the luteal phase of the menstrual cycle.

.....

.....

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.....

.....

[3]

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(b) Sundip is 19 years old and has been diagnosed with endometriosis.

She gets severe period pains and very heavy periods which mean she finds it difficult to go to work or out with her friends when she is having her period.

The doctor has already prescribed pain relief and hormonal contraceptives, but these have not worked.

The doctor has now suggested **two** possible treatments for Sundip:

- laparoscopic removal of the endometriosis tissue
- hysterectomy.

Discuss which treatment would be best for Sundip.

In your answer you must write about:

- any benefits of each treatment for Sundip
- any limitations of each treatment for Sundip
- which treatment you would recommend for Sundip **and** your reasons. **[9]**

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SAMPLE

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14 Jack is a 65-year-old male. He is a heavy smoker and is overweight.

He is going on holiday in six months' time. He will travel there on an aeroplane and the flight is 8 hours long.

Jack is worried as he has previously had deep vein thrombosis (DVT) and knows that taking a long flight will increase his risk of developing it again.

(a) State **one** symptom of deep vein thrombosis.

..... **[1]**

(b) Explain the health risks of having a deep vein thrombosis.

.....

.....

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.....

.....

[4]

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(c) Explain how Jack could reduce the risk of developing deep vein thrombosis.

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.....

[6]

END OF QUESTION PAPER

SAMPLE

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This is sample assessment material for our specification. It is to help show how the live assessment materials will look. During the lifetime of the qualification you might see small adjustments to the assessment materials. This is part of continuous improvement, designed to help you and your students. We recommend you look at the most recent set of past papers where available.

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Q 12 a, Human body, muscles by red-frog / Image supplied by Getty Images www.gettyimages.co.uk

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SAMPLE

Level 3 Alternative Academic Qualification in Health and Social Care

Unit F091: Anatomy and Physiology for Health and Social Care

Sample Assessment Material (SAM)

Mark scheme

This document has **11** pages.

SAMPLE

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MARKING INSTRUCTIONS

Crossed-out answers

If a student has crossed out an answer and written a clear alternative, do **not** mark the crossed-out answer.

If a student has crossed out an answer and **not** written a clear alternative, give the student the benefit of the doubt and mark the crossed-out answer if it's readable.

Multiple choice question answers

When a multiple choice question has only one correct answer and a student has written two or more answers (even if one of these answers is correct), you should **not** award a mark.

When a student writes more than one answer

1. Questions that ask for a set number (including 1) of short answers or points

If a question asks for a set number of short answers or points (e.g. **two** reasons for something), mark only the **first set number** of answers/points.

First mark the answers/points against any printed numbers on the answer lines, marking the **first** answer/point written against each printed number. **Then**, if students have not followed the printed numbers, mark the answers/points from left to right on each line and **then** line by line until the set number of answers/points have been marked. Do **not** mark the remaining answers/points.

2. Questions that ask for a single developed answer

If a student has written two or more answers to a question that only requires a single (developed) answer, and has **not** crossed out unintended answers, mark only the first answer.

3. Contradictory answers in points-based questions

When a student has written contradictory answers, do **not** award any marks, even if one of the answers is correct.

Levels of Response marking

1. To determine the level start at the highest level and work down until you reach the level that best describes the answer

2. To determine the mark within the level, consider the following:

Quality of the answer	Award mark
Consistently meets the criteria for this level	At the top of the level (6 and 9 mark questions)
Meets the criteria but with some inconsistency	At the middle of the level (9 mark questions)
On the borderline of this level and the one below	At the bottom of the level (6 and 9 mark questions)

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ANNOTATIONS

Annotation	Meaning
	Correct response
	Incorrect response
	Positive
	Negative
	Level 1
	Level 2
	Level 3
	Omission mark
	Benefit of doubt given (this annotation counts as a mark so do not tick as well)
	Contradiction
	Repeat
	Too vague
	Noted but no credit given

SAMPLE

MARK SCHEME

1	
Max mark	1 **(PO1)**
Answer	• fight infections. • destruction of cancer cells.
Guidance	No other answers are acceptable.

2	
Max mark	1 **(PO1)**
Answer	• Electrocardiogram (ECG)
Guidance	No other answers are acceptable.

3	
Max mark	1 **(PO1)**
Answer	• Alveoli
Guidance	No other answers are acceptable.

4	
Max mark	1 **(PO1)**
Answer	• Synaptic knob
Guidance	No other answers are acceptable.

5	
Max mark	1 **(PO1)**
Answer	• Glucose
Guidance	No other answers are acceptable.

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6	
Max mark	1 **(PO1)**
Answer	• Abdominal pain • Jaundice • Fever • Nausea • Unexplained weight loss
Guidance	No other answers are acceptable**.**

7	
Max mark	1 **(PO1)**
Answer	• Insulin
Guidance	No other answers are acceptable.

8	
Max mark	1 **(PO1)**
Answer	• Obesity • High fat and/or salt diet • Smoking • Diabetes • Stress • Hypertension
Guidance	No other answers are acceptable.

9	
Max mark	1 **(PO1)**
Answer	• Uterus
Guidance	No other answers are acceptable.

10	
Max mark	1 **(PO1)**
Answer	• Electromyography/nerve test
Guidance	No other answers are acceptable.

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11 (a)	
Max mark	4 **(PO1)**
Answer	• Contract • Ribs • Diaphragm • Enters
Guidance	No other answers are acceptable. If more than one answer is given in a space, no mark should be awarded.

11 (b)	
Max mark	3 **(PO2)**
Answer	• Oxygen moves from area of high concentration (Y/alveolus) to area of low concentration (X/capillaries). • Carbon dioxide moves from area of high concentration (X/capillaries) to area of low concentration (Y/alveolus). • Movement is through diffusion. • Movement is because of a diffusion gradient. • Oxygen binds to haemoglobin in the capillaries to form oxyhaemoglobin.
Guidance	Credit any other appropriate answer.

11 (c)	
Max mark	2 **(PO1)**
Answer	**One** mark for oxygen. **One** mark for glucose.
Guidance	No other answers are acceptable.

SAMPLE

11 (d) (i)	
Max mark	1 **(PO2)**
Answer	**One** mark for bacterial pneumonia.
Guidance	BOD Pneumonia No other answers are acceptable.

11 (d) (ii)	
Max mark	2 **(PO2)**
Answer	Up to **two** marks for explanation e.g.: • The baby is showing (three) symptoms of bacterial pneumonia. • The condition is more common in babies. • Could not be asthma, as this would not have the symptom of fever.
Guidance	Do not credit explanation for wrong condition or if no condition given. No other answers are acceptable.

12 (a)	
Max mark	3 **(PO1)**
Answer	• A=Biceps. • B=Deltoid. • C=Quadriceps.
Guidance	No other answers are acceptable.

12 (b)	
Max mark	3 **(PO1)**
Answer	• It is a fluid found in the joint cavity. • It is made by the synovial membrane. • It lubricates the joint/reduces friction, so it moves smoothly. • Acts as a shock absorber. • Nourishes the tissue surrounding it.
Guidance	One mark for each correct point made.

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12 (c)	
Max mark	6 **(PO3)**
Levels of Response	**Level 3 (high) 5-6 marks** A **thorough** analysis, which includes: • identification of a **range** of effects • **detailed** knowledge and understanding in the context of the question • **clear** explanation • **consistent** use of appropriate subject terminology. **Level 2 (mid) 3-4 marks** An **adequate** analysis which includes: • identification of **some** effects • **sound** knowledge and understanding in the context of the question • **adequate** explanation • **some** use of appropriate subject terminology. **Level 1 (low) 1-2 marks** A **basic** analysis which includes: • identification of **at least one** effect • **limited** knowledge and understanding in the context of the question • **basic** explanation • use of appropriate subject terminology is **limited**. **0 marks** Answer is **not** worthy of credit.
Indicative content	Answers can include some of the following: • The condition develops due to loss of joint space… • resulting in bones touching. • This causes cartilage to be broken down/worn away… • over a period of time… • which results in friction between bones • …causing pain… • and inflammation of the affected joints… • …which can reduce the range of motion. • In addition, bone spurs can form on the outer area of the joint… • …which can reduce the range of motion.

SAMPLE

12 (d)	
Max mark	3 **(PO2)**
Answer	• Pain medication and joint support devices are non-surgical treatments and so are low risk (for Eve)/hip replacement is a surgical treatment and carries a risk. • Only a recent diagnosis so would try non-surgical treatments first. • There are other non-surgical treatments that have not yet been tried (e.g. steroid injections), so these would be recommended (for Eve) before surgery. • Only recently diagnosed so may not yet know the severity, so pain medication and joint support might be sufficient to treat the condition.
Guidance	One mark for each correct point made.

13 (a)	
Max mark	3 **(PO1)**
Answer	• It is the phase between ovulation and start of next period. • It begins around day 15 of 28 day menstrual cycle. • Lining of uterus thickens. • Uterus is prepared for pregnancy/(ovum) implantation. • If no pregnancy the uterus begins to shed.
Guidance	One mark for each correct point made.

13 (b)	
Max mark	9 **(PO3)**
Levels of Response	**Level 3 (high) 7-9 marks** A **thorough** discussion which shows **detailed** evaluation, which includes: • a **range** of benefits and limitations of **both** treatments • a **detailed** analysis in the context of the question • a **clear** conclusion with **detailed** reasons • **consistent** use of appropriate subject terminology. **Level 2 (mid) 4-6 marks** An **adequate** discussion which shows **sound** evaluation, which includes: • **some** benefits and limitations of **both** treatments • **some** analysis in the context of the question • an **adequate** conclusion with relevant reasons • **some** use of appropriate subject terminology. **Level 1 (low) 1-3 marks** A **basic** discussion which shows **limited** evaluation, which includes: • a few benefits and limitations of the treatments • a limited analysis in the context of the question • a brief conclusion with limited reasons • use of appropriate subject terminology is limited. **0 marks** Answer is **not** worthy of credit.

SAMPLE

Indicative content	Answers can include some of the following: **Laparoscopic removal of endometriosis tissue** • Keyhole surgery (used to remove endometriosis tissue) **Benefits** • For most people (approximately 70%) it cures the condition • Relieves symptoms/pain. • Less invasive • Quicker recovery • Minimal scarring • Can improve fertility. **Limitations** • May require multiple operations. • Risk of infection • Problems can reoccur. **Hysterectomy** • Major surgery • Removal of the uterus and fallopian tubes • Normally only considered if other less invasive treatment have been tried and been unsuccessful • Used where people have severe pain symptoms. **Benefits** • Relieves symptoms/pain • More successful than laparoscopic removal of endometriosis tissue in reducing pain. **Limitations** • More invasive • Longer recovery • Larger scars • Risk of infection • Inability to be pregnant • Not always successful at relieving symptoms • May require HRT treatment after surgery. **Recommended treatment** • Candidates may conclude that laparoscopic removal is the most appropriate treatment because: ○ Only 19 may well still want to have children ○ Hysterectomy only used after other treatments have been unsuccessful.

14 (a)	
Max mark	1 **(PO1)**
Answer	• Pain (at the site of the DVT). • Swelling (at the site of the DVT). • Redness (at the site of the DVT).
Guidance	No other answers are acceptable.

SAMPLE

14 (b)	
Max mark	4 **(PO1)**
Answer	• can cause pain and swelling in area where clot forms • typically this is in the legs and pelvis • it can cause a pulmonary embolism • this is where the clot travels to the lungs and blocks blood flow • this can be life threatening
Guidance	One mark for each correct point made.

14 (c)	
Max mark	6 **(PO2)**
Levels of Response	**Level 3 (high) 5-6 marks** A **clear** and **thorough** explanation, which includes: • identification of a **range** of relevant points that are explained • **detailed** knowledge and understanding in the context of the question • **consistent** use of appropriate subject terminology. **Level 2 (mid) 3-4 marks** An **adequate** explanation which includes: • identification of points that are **mostly relevant** and sometimes explained • **sound** knowledge and understanding in the context of the question • **some** use of appropriate subject terminology. **Level 1 (low) 1-2 marks** A **basic** explanation which includes: • identification of **at least one** point with **basic** explanation attempted • **limited** knowledge and understanding in the context of the question • use of appropriate subject terminology is **limited**. **0 marks** Answer is **not** worthy of credit.
Indicative content	The answer must be linked to the scenario to reach Level 3. Answers can include some of the following: • Use of compression stockings on the flight… • …which improves blood flow and prevent swelling of legs. • Regular movement whilst on the flight… • …which increases the flow of blood through the legs. • Jack staying hydrated whilst on the flight… • …which means blood will be more viscous and thus less likely to clot. • Jack quitting smoking a significant period of time before the flight… • …as chemicals in cigarettes can cause platelets to clump together and form a clot, therefore quitting smoking reduces this risk. • Jack could lose weight prior to going on holiday… • …excess fat compress veins and thickens blood making blood clots more likely. Weight loss reduces these risks.

SAMPLE